The Zurich Study: XXII

Epidemiology of gastrointestinal complaints and comorbidity with anxiety and depression

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Abstract A representative cohort of Swiss adults recruited at age 20 years and interviewed at ages 23, 28 and 30 years was studied regarding the symptomatology, prevalence and longitudinal course of functional gastrointestinal symptoms and their association with psychiatric syndromes. A functional gastrointestinal complaint was identified if a proband reported symptoms at least eight times in the past year or for a duration of at least 2 weeks without medical explanation and with a moderate degree of distress. Of the population, 9.4-17.7% was found to suffer from functional stomach complaints and 4.9-16% from functional intestinal complaints. Women reported functional gastrointestinal complaints two to three times more often than men, and increasingly so with age. The overlap of stomach and intestinal complaints was modest with 2.0-6.7%. Cross-sectionally, functional stomach complaints were significantly associated with major depression (DSM-III-R), recurrent brief depression (RBD), subthreshold RBD and dysthymia, and with subthreshold panic disorder, agoraphobia, social phobia and recurrent brief anxiety. Functional intestinal complaints showed a consistently significant association with RBD, dysthymia, major depression, subthreshold RBD, panic disorder, subthreshold panic disorder, agoraphobia, simple and social phobia and generalized anxiety disorder. Individuals who at younger ages suffered from functional gastrointestinal complaints did not show an increased risk for a subsequent development of an anxiety or depressive disorder. Functional gastrointestinal complaints reflect an unspecified concomitant vegetative disturbance common to depression and anxiety; they do not reflect a risk factor for the development of a specific anxiety or depressive disorder.

Key words Epidemiology · Prevalence · Functional gastrointestinal complaints · Depressive disorders · Anxiety disorders

Introduction

Gastrointestinal (GI) symptoms considered to be of functional origin, such as stomach burning, nausea, bloating, constipation, diarrhoea or abdominal cramps, are experienced quite frequently, albeit intermittently, by a normal population. The hallmark of a functional symptom is the absence of structural or biochemical abnormalities, which could explain it adequately (Talley 1994). The pathogenesis of functional gastrointestinal symptoms still remains to be clarified. Visceral hypersensitivity, disturbances in gut motility and psychological factors have been implied (Zighelboim and Talley 1993). Although most functional symptoms are short lived and minimally distressing, more distressing and longer lasting gastrointestinal symptom complexes have been reported in clinical and population-based samples. Yet, even these longer lasting gastrointestinal symptoms appear to come and go (Talley et al. 1992). The first description of a functional abdominal syndrome dates back to Da Costa (1871), when he reported on seven patients with a syndrome reminiscent of the irritable bowel syndrome. Recently, the concept of irritable bowel syndrome has been defined more clearly by establishing criteria (Manning and Rome criteria) for its diagnosis (Manning et al. 1978; Thompson 1983; Talley et al. 1990; Thompson et al. 1989).

Of patients reporting to a gastroenterologist 13-52% suffer from a functional abdominal syndrome (Hill and Blendis 1967; Fahrlander 1972; Almy 1973; Ferguson et al. 1977; Fielding 1977; Whitehead and Bosnjian 1982). In early (Bockus et al. 1929; Almy 1951) as well as in recent publications on functional GI syndromes (Chaudhary and Truelove 1961; Craig and Brown 1984; Kellow et al. 1992) it has been noted that psychosocial distress appeared to bring forth functional abdominal symptoms. For instance, Talley et al. (1995) reported that a history of self-reported sexual, physical, emotional or verbal abuse is more frequent in outpatients with irritable bowel syndrome than patients with organic gastroenterological disease.
It has also been contended that certain psychological characteristics increase an individual’s likelihood to suffer from functional abdominal symptoms. Clinical observations suggest that patients with functional abdominal syndromes typically exhibit anxious and depressive symptoms, sleep disturbance, nervousness, concentration difficulties and fatigue (Uexküll and Köhle 1990). On psychological tests patients with functional distress primarily in the upper abdominal region were found to demonstrate high scores in neuroticism, depression and situational anxiety (Seward et al. 1965; Sklar 1970; Schüßel et al. 1971; Berman and Kirsner 1972; Palmer et al. 1974; Heerlein et al. 1984). Although there is considerable evidence to suggest that psychological factors are associated with functional abdominal syndromes, there is still controversy surrounding the nature and relative importance of this association (Ford et al. 1987; Drossmann et al. 1988; Thompson et al. 1989; Fossey and Lydiard 1990; Kumar et al. 1990; Kinney and Heerlein 1992). Clinical samples of patients with functional abdominal syndromes were also found to suffer frequently from psychiatric disorders, especially anxiety and affective disorders (Young et al. 1976; McDonald and Bouchier 1980; Ford et al. 1987). Recent data from the ECA study, a large representative epidemiological study on psychiatric syndromes in the general population of the United States, has revealed a high prevalence of GI symptoms of between 6 and 25%, associated with an increased risk of lifetime episodes of depression, agoraphobia or panic disorder (Walker et al. 1992). With increasing numbers of GI symptoms there was an increase in the lifetime risk of any one of these psychiatric disorders.

Most studies concentrating on the relationship between functional abdominal symptoms and psychological factors or psychiatric disease are based on clinical and often tertiary care samples. Apart from the ECA data, there is little information on the distribution of functional GI complaints and their association with psychiatric syndromes in the general population.

The purpose of the present study was to describe the occurrence, symptomatology, prevalence and longitudinal course of functional GI symptoms in a representative cohort of young Swiss adults followed between the ages of 20–30 years. What percentage of a young adult population suffers from a functional abdominal syndrome? What is the symptom profile of functional complaints? Are these symptom profiles stable over time? Is the presentation of a functional GI syndrome an enduring trait or more of a fluctuating state? Do upper abdominal or stomach complaints follow a different pattern from lower abdominal complaints, or could they be treated as a uniform condition? Furthermore, our study investigates the relationship of functional GI complaints to depressive and anxiety syndromes. To what extent are they cross-sectionally and longitudinally associated with different anxiety and depressive disorders? Are functional GI complaints a potential risk factor for the development of later anxiety or depressive disorders?

The impact of personality and psychosocial factors on the prevalence of functional stomach and intestinal complaints has already been examined (Wicki 1991; Wicki and Angst 1992).

### Subjects and methods

In 1978 a representative sample of 4567 young adults aged 19–20 years (males were 1 year younger than females) from the Canton of Zurich, Switzerland, was screened with the SCL-90-R (Derogatis 1977). A total of 591 subjects were chosen randomly for the longitudinal cohort study, two thirds from the high scorers and one third from the low scorers on the SCL-90-R (Angst et al. 1984a, b). In 1979, at ages 20–21 years, the cohort was interviewed for the first time in a semistructured psychiatric interview called SPIKE, which was developed by Angst et al. (1984b). The subjects were reinterviewed in 1981 (n = 456) at age 22–23 years, in 1986 (n = 457) at age 27–28 years and in 1988 (n = 415) at age 29–30 years. The overall dropout rate between 1979 and 1988 was 28%.

The instrument SPIKE was developed specifically for epidemiological investigations in a general population. It elicits information on psychological and psychosomatic symptoms, their duration and frequency, aetiological attribution by the subject, degree of subjective suffering and distress, work and leisure time impairment (on a visual analogue scale 1–100), consumption habits and help-seeking behaviour. It is structured into 24 syndromal sections on psychological or psychosomatic symptoms. In all four interviews, information on somatic symptoms within the following seven body regions was obtained: stomach, intestines, heart, respiration, circulatory, back and head. Within each somatic syndrome an open question was posed to each subject to ascertain whether he/she had experienced any symptoms in the above-mentioned body area within the past 12 months, and followed by questions on the characteristics, duration, frequency and subjective distress caused by any complaint mentioned. Furthermore, information was obtained whether a medical diagnosis had been given to the symptoms, whether the proband had felt impaired at work or in his leisure activities by these symptoms, whether he had sought professional or other help and whether he attributed the symptoms to a psychological or physical problem. Information on age of onset of the symptom clusters within the seven body areas and on family history was obtained.

Each interview analogous information was obtained for psychological symptoms. On the basis of this information it was possible to make psychiatric diagnoses within the DSM-III and DSM-III-R diagnostic system, as well as to observe the occurrence and longterm course of subthreshold psychiatric disturbances. Furthermore, subjects were asked about major life changes with an interview modified after Tennant and Andrews (1976, 1977). All subjects were questioned about problems in their childhood up to age 16 years. After each interview, subjects again filled out the SCL-90-R. The interviews were all carried out by trained clinical psychologists or in a minority by trained psychiatric residents, generally at the home of the subject.

The instrument SPIKE was used for each interview wave of the Zurich Study (Angst and Dobler-Mikola 1985; Angst et al. 1984 a–c; Binder et al. 1981). In later interviews the instrument was revised to allow for DSM-III diagnoses, and DSM-III-R diagnoses. Each syndromal diagnosis, e.g. depression, was tested for its internal validity by establishing the amount of subjective suffering caused by the syndrome, the amount of associated treatment seeking and work- or leisure-time impairment (Angst and Dobler-Mikola 1984 c).

The questionnaire SPIKE was also validated against the charts of 30 psychiatric patients from an outpatient clinic (Illes 1982), taking the clinical diagnoses noted in the charts as the gold standard. Chart entries had been made by the treating physician without knowledge of the SPIKE data. Diagnoses were made according to ICD-9, or were noted as a syndrome, especially for psychosomatic symptoms. Although there were few cases, 80% of